

## CLAIMS

1. A wafer storage container apparatus for storing a plurality of wafer elements comprising:
  - a wafer storage chamber;
  - at least one orientation artifact disposed within the wafer storage chamber; and
  - a plurality of wafer elements adapted for insertion into the wafer storage chamber in a stack, each wafer element including at least one alignment artifact thereon, wherein each at least one alignment artifact corresponds to at least one orientation artifact, thereby orienting each wafer element in the wafer storage chamber and preventing substantial rotational movement of each wafer element within the storage chamber.
2. An apparatus as recited in claim 1 wherein the wafer storage chamber includes:
  - a base upon which to place the stack; and
  - a wall connected to the base that is adapted to surround the stack.
3. An apparatus as recited in claim 2 wherein the orientation artifact is a wall contour artifact disposed on the wall, and wherein the alignment artifact is a contour artifact disposed on an edge of the wafer element.
4. An apparatus as recited in claim 2 wherein:
  - each wafer element includes a plurality of alignment artifacts and there exists a corresponding plurality of orientation artifacts disposed within the wafer storage container; and
  - each orientation artifact is a wall contour artifact disposed on a different location of the wall, and wherein each alignment artifact is a contour artifact disposed on an a different edge location of the wafer element.
5. An apparatus as recited in claim 2 wherein a substantial portion of the wall is formed to include a draft angle.

6. An apparatus as recited in claim 2 further comprising a cover adapted for insertion on a top of the wall.

7. An apparatus as recited in claim 1 wherein each of the wafer elements includes a wafer frame adapted to assist holding a wafer and an adhesive film adapted to assist holding the wafer frames; and wherein the alignment artifact is disposed on the wafer frame.

8. An apparatus as recited in claim 7 wherein each of the wafer frames includes an open area covered by the adhesive film, and wherein the wafer rests on the adhesive film.

9. An apparatus as recited in claim 7 wherein the wafer storage chamber includes:  
a base upon which to place the stack; and  
a wall connected to the base that is adapted to surround the stack.

10. An apparatus as recited in claim 9 wherein the orientation artifact is a wall contour artifact disposed on the wall, and wherein the alignment artifact is a contour artifact disposed on an edge of the wafer frame.

11. An apparatus as recited in claim 9 wherein:  
each wafer frame includes a plurality of alignment artifacts and there exists a corresponding plurality of orientation artifacts disposed within the wafer storage container; and  
each orientation artifact is a wall contour artifact disposed on a different location of the wall, and wherein each alignment artifact is a contour artifact disposed on an a different edge location of the wafer frame.

12. An apparatus as recited in claim 9 wherein a substantial portion of the wall is formed to include a draft angle.

13. An apparatus as recited in claim 9 further comprising a cover adapted for insertion on a top of the wall.

14. An apparatus as recited in claim 7 wherein each wafer frame includes a plurality of alignment artifacts and there exists a corresponding plurality of orientation artifacts disposed within the wafer storage container.

15. A method of storing a plurality of wafers in a stack within a wafer storage container, the method comprising the steps of:

placing each of a plurality of wafers on one of a corresponding plurality of wafer frames to obtain a plurality of wafer assemblies, each wafer frame including at least one alignment artifact disposed thereon, the step of placing resulting in adhesion between each wafer and corresponding wafer frame sufficient to prevent substantial movement of the wafer relative to the corresponding wafer frame;

sequentially placing each wafer assembly into a wafer storage chamber to form a stack, the step of sequentially placing including the step of aligning the at least one alignment artifact disposed on each wafer frame with at least one orientation artifact disposed within the wafer storage container, thereby orienting each wafer frame in the wafer storage chamber and preventing substantial rotational movement of the each wafer frame and the wafer disposed thereon within the storage chamber; and

covering the wafer storage chamber with a cover to fully enclose the stack.

16. The method according to claim 15 wherein the step of placing includes placing an adhesive film over an open area of each wafer frame.

17. The method according to claim 15 wherein the step of placing further includes the step of placing each wafer on the adhesive film.

18. A method according to claim 15 wherein the step of sequentially placing each wafer assembly into the wafer storage chamber to form the stack includes aligning a plurality of alignment artifacts disposed on each wafer frame with a corresponding plurality of orientation artifacts disposed within the wafer storage container.